What is claimed is:

1. A method for deriving information about at least one second station (100, 101) that operates on a medium scanned by a first station (100, 101), comprising the steps of:

(a) scanning by the first station (100, 101) during a predetermined sensing interval that comprises at least one consecutive sensing interval, for at least one activity on the medium by the at least one second station (100, 101);

(b) measuring (203, 205) by the first station (100, 101) the scanned at least one activity of the at least one second station (100, 101); and

(c) deriving (203, 205) by the first station (100, 101) at least one activity pattern of the second station (100, 101) over the predetermined sensing interval from the measured scanned at least one activity of the at least one second station (100, 101).

2. The method of claim 1, wherein step (a) further comprises the step of (a.1) detecting (203, 205) at least one of at least one busy period and at least one idle period during the sensing interval.

3. The method of claim 2, wherein step (a.1) further comprises the steps of

(a.1.1) accumulating (203, 204, 205) a received power level of said scanned activity;

(a.1.2) at least one of simultaneous and consecutive sensing (203, 205) of the at least one busy period when at least one condition is satisfied of the group consisting of the accumulated received power level exceeds at least one predetermined power threshold using a pure power detection and a preamble is detected; and

(a.1.3) at least one of simultaneous sensing (203, 205) during the sensing interval and successive sensing (203, 205) during consecutive sensing intervals of the at least one idle period when the accumulated received power level is less than the at least one predetermined power threshold and a preamble is not detected.

4. The method of claim 3, wherein step (a) further comprises the step of (a.2) detecting (203, 205) a virtual busy period.

5. The method of claim 4, wherein step (a.2) further comprises the step of (a.2.1) regardless of the accumulated received power level, sensing (203, 205) a detected virtual busy period as an allocated medium by the at least one second station that is not used for transmission by the at least one second station.

6. The method of claim 5, wherein step (b) further comprises the step of (b.1) ascertaining an absolute number of occurrences and a total duration (203, 205) of the at least one scanned activity over the sensing interval.

7. The method of claim 6, wherein step (c) further comprises the step of (c.1) computing from the total duration (203, 205) of the at least one activity a percentage of time the at least one activity occurred during the sensing interval.

8. The method of claim 7, further comprising the steps of:

performing steps (a) - (c) for the predetermined time period comprising at least one consecutive sensing interval (203, 205) ; and

(d) representing the absolute number of occurrences of the at least one activity that occurred during the at least one sensing interval of the predetermined time period by a histogram thereof over the predetermined time period (203, 205).

9. The method of claim 1, further comprising the step of (e) step for using (205) the at least one derived activity pattern to discover at least one of -

i. the at least one second station is a non-IEEE 802.11 device,

ii. the at least one second station is an IEEE 802.11e device,

iii. the quality of service (QoS) parameter set applied by the at least one second station

iv. the at least one second station uses hybrid coordination function (HCF),

v. the at least one second station is one of IEEE 802.11b and IEEE 802.11g, and

vi. at least the at least one second station is hidden from the first station.

10. The method of claim 9, further comprising the step of

(f) receiving a Medium Sensing Measurement Request by the first station for the derivation of at least one medium access pattern of the at least one second station; and

(g) in response to the received Medium Sensing Measurement Request, transmitting by the first station a Medium Sensing Measurement Report containing at least one medium access activity pattern of the at least one second station derived by the first station.

11. The method of claim 10, wherein

the receiving step (f) further comprises the step (f.1) of receiving a Medium Sensing Measurement Request comprising fields -

	Channel Number 301	Channel Band 302	Measurement Duration 303	Medium Sensing Measurement Subtype 304	RPI Threshold 305	Bin Offset 306	Bin Interval 307	Number of Bins 308
Octets:	1	1	2	1	1	1	1	1

said fields being

- a Channel Number (301) that indicates a channel number for which the measurement request applies,
- a Channel Band (302) that indicates a frequency band,
- a Measurement Duration (303) that is set equal to the duration of the requested measurement, expressed in Timer Units (TUs),
- a Medium Sensing Measurement Subtype (304) that indicates a time histogram subtype of Medium Sensing Measurement to be made selected from the group consisting of Received Power Indicator (RPI) time histogram, Clear Channel Assessment (CCA) idle time histogram, Clear Channel Assessment (CCA) busy time histogram, and Network Allocation Vector (NAV) busy histogram,

- a Received Power Indicator (RPI) (305) that is defined as a quantized measure of the received power level as seen at an antenna connector of the first station,
- a Bin Offset (306) that indicates the position of a first bin, expressed in microseconds (206),
- a Bin Interval (307) that indicates the time interval during which Medium Sensing Events are counted to be in this bin, expressed in slot times, and
- a Number of Bins (308) that indicates a total number of time intervals that are covered by the time histogram; and

the transmitting step (g) further comprises the step of (g.1) receiving a Medium Sensing Measurement Report comprising fields -

Channel Number 401	Channel Band 402	Measurement Duration 403	Medium Sensing Measurement Subtype 404	RPI Threshold 405	Bin Offset 406	Bin Interval 407	Number of Bins 408	Total No. of Medium Sensing Events 409	Bin 0 Density 410	Bin 1 Density 411	. . .	Bin N-1 Density 41(N-1)
Octets 1	1	2	1	1	1	1	1	4	1	1		1

said fields being

- a Channel Number (401) that indicates the channel number to which the Medium Measurement Report applies,
- a Channel Band (402) that indicates a measured frequency band in which the Channel Number applies,

- a Measurement Duration (403) that is set equal to the duration over which the Medium Sensing Measurement Report was measured, expressed in Timer Units (TUs).
- a Medium Sensing Measurement Subtype (404) that indicates the subtype of Medium Sensing Time Histogram Report,
- an RPI Threshold (405) that identifies a received power level, as seen at an antenna connector of the first station,
- a Bin Offset (406) that indicates the position of a first bin, expressed in microseconds (206),
- a Bin Interval (407) that indicates the time interval during which Medium Sensing Events are counted to be in this bin, expressed in slot times,
- a Number of Bins (408): in N bins the Medium Sensing Measurement Report contains a density in a correspond one of N time intervals as measured in the specified Channel Number over the Measurement Duration,
- a Total Number of Medium Sensing Events (409) that indicates how many events have been counted during the Measurement Duration, and
- Bin_i - density, $0 \le i < N$, the STA develops a probability distribution of Medium Sensing Events in time.

12. The method of claim 11, wherein the step (g) further comprises the steps of

(g.2) computing the Bin_i density, $0 \le i < N$, in which the STA monitors the contiguous duration of a monitored state of one of idle and busy, and increments a

counter, Bin_i 41(i-1), by 1 if a Medium Sensing Event occurs during the measurement at time t with

$$i_0+(i*\Delta i) < t \leq i_0+((i+1)*\Delta i) \text{ for any } i<N-1,$$

$$i_0+(N*\Delta i) \leq t \text{ for } i=N-1; \text{ and}$$

(g.3) generating a histogram (203, 205, 206) that represents the probability distribution of the Medium Sensing Event over the Measurement Duration.

13. A method for obtaining information about medium activity patterns of at least one second station (101) on a medium scanned by a first station (101), comprising the steps of:

transmitting (207, 208) by the first station a Medium Sensing Measurement Request (320);

receiving (201, 202), by the first station (101) in response to the transmitted request (320), a Medium Sensing Measurement Report (420) comprising at least one activity pattern of the at least one second station (101);

step for using by the first station (101) the at least one derived activity pattern 406-41(N-1) of the at least one second station (101) to discover at least one of -

i. the at least one second station (101) is a non-IEEE 802.11 device,

ii. the at least one second station (101) is an IEEE 802.11e device,

iii. the quality of service (QoS) parameter set applied by the at least one second station (101),

iv. the at least one second station (101) uses hybrid coordination function (HCF),

v. the at least one second station (101) is one of IEEE 802.11b and IEEE 802.11g, and

vi. at least the at least one second station (101) is hidden from the first station (101).

14. A method for obtaining information about medium activity patterns of at least one second station (101) on a medium scanned by a first station (101), comprising the steps of:

receiving (201, 202) by the first station a Medium Sensing Measurement Report (420) comprising at least one activity pattern 406-41(N-1) of the at least one second station (101);

step for using by the first station (101) the at least one derived activity pattern of the at least one second station (101) to discover at least one of -

i. the at least one second station 101 is a non-IEEE 802.11 device,

ii. the at least one second station 101 is an IEEE 802.11e device,

iii. the quality of service (QoS) parameter set applied by the at least one second station (101),

iv. the at least one second station (101) uses hybrid coordination function (HCF),

v. the at least one second station (101) is one of IEEE 802.11b and IEEE 802.11g, and

vi. at least the at least one second station (101) is hidden from the first station.

15. An apparatus at a first station (101) for obtaining information about at least one second station (101) that operates on a medium scanned by the first station (101), comprising:

a receiver (201) for receiving an incoming signal from the at least one second station (101) over a predetermined sensing interval that comprises at least one consecutive sensing interval;

an activity acquisition and pattern derivation circuit (203) that measures activity patterns of said incoming signal received therein and derives patterns therefrom;

a timer (206) that provides a time reference in timer units (TUs);

a control processor (205), coupled to said activity acquisition and pattern derivation circuit (203) and said timer (206) and, during the predetermined interval, configured to sense at least one of busy and idle activity of said incoming signal and derive an activity pattern as a histogram over time therefrom.

16. The apparatus of claim 15, further comprising:

a memory (204), coupled to said control processor (205) to store said histogram over time; and

wherein said control processor (205) is further configured to -

accumulate a received (201) power level of said scanned activity,

perform at least one of simultaneous sensing during the sensing interval and successive sensing during consecutive sensing intervals of the at least one busy period when at least one condition is satisfied of the group consisting of the accumulated received power level exceeds at least one

predetermined power threshold using a pure power detection and a preamble is detected, and

perform at least one of simultaneous sensing during the sensing interval and successive sensing during consecutive sensing intervals of the at least one idle period when the accumulated received power level is less than the at least one predetermined power threshold and a preamble is not detected.

17. The apparatus of claim 16, wherein said control processor (205) is further configured to sense a detected virtual busy period as an allocated medium by the at least one second station (101) that is not used for transmission by the at least one second station (101), regardless of the accumulated received power level.

18. The apparatus of claim 17, wherein said control processor (205) is further configured to use the at least one derived activity pattern to discover at least one of -

i. the at least one second station (101) is a non-IEEE 802.11 device,

ii. the at least one second station (101) is an IEEE 802.11e device,

iii. the quality of service (QoS) parameter set applied by the at least one second station (101),

iv. the at least one second station (101) uses hybrid coordination function (HCF),

v. the at least one second station (101) is one of IEEE 802.11b and IEEE 802.11g, and

vi. at least the at least one second station (101) is hidden from the first station (101).

19. The apparatus of claim 18, wherein:

the first station (101) receives a Medium Sensing Measurement Request (320) for the derivation of at least one medium access histogram of the at least one second station (101); and

in response to the received Medium Sensing Measurement Request (320), the first station (101) transmits (207, 208) a Medium Sensing Measurement Report (420) containing at least one medium access histogram of the at least one second station 101 derived by the first station (101).

20. The apparatus of claim 19, wherein

the Medium Sensing Measurement Request comprises fields -

	Channel Number 301	Channel Band 302	Measurement Duration 303	Medium Sensing Measurement Subtype 304	RPI Threshold 305	Bin Offset 306	Bin Interval 307	Number of Bins 308
Octets:	1	1	2	1	1	1	1	1

said fields being

- a Channel Number (301) that indicates a channel number for which the measurement request applies,
- a Channel Band (302) that indicates a frequency band,
- a Measurement Duration (303) that is set equal to the duration of the requested measurement, expressed in Timer Units (TUs),

- a Medium Sensing Measurement Subtype (304) that indicates a time histogram subtype of Medium Sensing Measurement to be made selected from the group consisting of Received Power Indicator (RPI) time histogram, Clear Channel Assessment (CCA) idle time histogram, Clear Channel Assessment (CCA) busy time histogram, and Network Allocation Vector (NAV) busy histogram,
- a Received Power Indicator (RPI) (305) that is defined as a quantized measure of the received power level as seen at an antenna connector of the first station,
- a Bin Offset (306) that indicates the position of a first bin, expressed in microseconds (206),
- a Bin Interval (307) that indicates the time interval during which Medium Sensing Events are counted to be in this bin, expressed in slot times, and
- a Number of Bins (308) that indicates a total number of time intervals that are covered by the time histogram; and

the transmitting step (g) further comprises the step of (g.1) receiving a Medium Sensing Measurement Report comprising fields -

Channel Number 401	Channel Band 402	Measurement Duration 403	Medium Sensing Measurement Subtype 404	RPI Threshold 405	Bin Offset 406	Bin Interval 407	Number of Bins 408	Total No. of Medium Sensing Events 409	Bin 0 Density 410	Bin 1 Density 411	. . .	Bin N-1 Density 41(N-1)
Octets 1	1	2	1	1	1	1	1	4	1	1		1

said fields being

- a Channel Number (401) that indicates the channel number to which the Medium Measurement Report applies,
- a Channel Band (402) that indicates a measured frequency band in which the Channel Number applies,
- a Measurement Duration (403) that is set equal to the duration over which the Medium Sensing Measurement Report was measured, expressed in Timer Units (TUs).
- a Medium Sensing Measurement Subtype (404) that indicates the subtype of Medium Sensing Time Histogram Report,
- an RPI Threshold (405) that identifies a received power level, as seen at an antenna connector of the first station,
- a Bin Offset (406) that indicates the position of a first bin, expressed in microseconds (206),
- a Bin Interval (407) that indicates the time interval during which Medium Sensing Events are counted to be in this bin, expressed in slot times,
- a Number of Bins (408): in N bins the Medium Sensing Measurement Report contains a density in a correspond one of N time intervals as measured in the specified Channel Number over the Measurement Duration,
- a Total Number of Medium Sensing Events (409) that indicates how many events have been counted during the Measurement Duration, and
- Bin_i - density, $0 \leq i < N$, the STA develops a probability distribution of Medium Sensing Events in time.

21. The apparatus of claim 20, wherein:

the control processor (205) is further configured to -

for a monitored state of one of idle or busy, compute the Bin_i 41(i-1) density, $0 \leq i < N$, in which the first station 101monitors the contiguous duration of the monitored state and increments the counter, the Bin_i, by 1 if a Medium Sensing Event occurs during the measurement at time t with

$i_0+(i*\Delta i) < t \leq i_0+((i+1)*\Delta i)$ for any $i<N-1$,

$i_0+(N*\Delta i) \leq t$ for $i=N-1$; and

generate a histogram that represents the probability distribution of the Medium Sensing Event over the Measurement Duration.